

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

CLAIM 1 (Currently Amended)

1. A microprobe, comprising:

- a housing having an aperture;
- an ISFET attached to the housing, wherein the ISFET has a gate located proximate the aperture; and
- a reference electrode attached to the housing proximate the aperture;
- a calibrant in contact with the gate of the ISFET and with the reference electrode.

CLAIM 2 (Original)

2 The microprobe of claim 1, wherein the housing and the ISFET are integrally formed in biocompatible material.

CLAIM 3 (Original)

3 The microprobe of claim 1, wherein the housing and the reference electrode are integrally formed in biocompatible material.

CLAIM 4 (Original)

4 The microprobe of claim 1, wherein the housing is a hermetically sealed encapsulant, and wherein at least a portion of the gate and at least a portion of the reference electrode are located within the aperture.

CLAIM 5 (Original)

5 The microprobe of claim 1, further comprising a substrate attached to the housing, wherein the ISFET and the reference electrode are integrally formed on the substrate, wherein the ISFET and the reference electrode are monolithically integrated, and wherein the ISFET and the microelectrode are located on a portion of the substrate that includes the aperture.

CLAIM 6 (Original)

6 The microprobe of claim 5, further comprising associated circuitry monolithically integrated with the ISFET and the reference electrode.

CLAIM 7 (Original)

7 The microprobe of claim 6, wherein the associated circuitry comprises a temperature sensing diode.

CLAIM 8 (Original)

8 The microprobe of claim 1, wherein the microprobe defines an exterior space that is exterior to the microprobe, and wherein at least a portion of the gate and at least a portion of the reference electrode are in fluid communication with the exterior space.

CLAIM 9 (Original)

9 The microprobe of claim 1, further comprising an electrical power generator coupled to said ISFET selected from the group consisting of: battery, photovoltaic, chemical, radioisotope, and kinematic power sources.

CLAIM 10 (Original)

10 The microprobe of claim 1, further comprising an antenna and a capacitor, wherein the capacitor is coupled to the ISFET, and the antenna is coupled to the capacitor, and wherein the capacitor is configured to store electromagnetic energy received by the antenna.

CLAIMS 11-12 (Canceled)

CLAIM 13 (Currently Amended)

13 A microsensor system, comprising:

- an actuator; and
- a microprobe proximate the actuator, wherein the microprobe comprises:
 - a housing having an aperture;
 - an ISFET attached to the housing, wherein the ISFET has a gate located proximate the aperture; and
 - a reference electrode attached to the housing proximate the aperture;

a cantilever arm attached to the actuator and the microprobe.

CLAIM 14 (Canceled)

CLAIM 15 (Original)

15 The microsensor system of claim 13, wherein the actuator is a piezoelectric actuator.

CLAIM 16 (Original)

16 The microsensor system of claim 13, wherein the actuator is an electromagnetic actuator.